ITEM 409 **CAST IRON CASTINGS

This item shall govern for the furnishing and installation of frames, grates, rings and covers for inlets, storm sewer manholes and other structures in accordance with the plans and specifications.

MATERIALS: Cast Iron Castings shall conform to the requirements of "Gray Iron Castings", AASHTO M105 or ASTM A48 Class 35B. Frames, grates, rings and covers shall show no permanent deformation when a proof load of 40,000 lb. (18.2 Mg) is concentrated on a 9 by 9 inches (230 by 230 mm) area placed on the cover or grate. Castings shall be boldly filleted at angles and the arises shall be sharp and perfect. Castings shall be true to pattern in form and dimensions, free from pouring faults, sponginess, cracks, blow holes and other defects in positions affecting their strength for the service intended. Bearing surfaces shall be cast with such precision or shall be so machined, that perfect bearing will be attained.

CONSTRUCTION METHODS: Frames, grates, rings and covers shall be constructed of the materials as specified and in accordance with the details shown on the plans and shall be placed carefully to the lines or grades indicated on the plans or as directed by the Engineer. The cover shall not rock when rotated to any position in the frame. The cover shall sit down into the frame, preferably so that the upper surface of the cover will be flush with the upper surface of the frame. Frames, grates, rings and covers, which have been damaged either during manufacture or

in shipping, may be rejected unless repairs are made which are satisfactory to the Engineer. Among others the following defects shall be considered as constituting poor workmanship:

Major Defects (Pinholes, Shrink, and Cracks) will be cause for rejection or requires proof by supplier that defect is not injurious

Minor Defects (Dirt, Scab, and Slag) are to be repaired, recleaned, resubmitted

A foundry certification shall be furnished to the Engineer stating that samples representing each lot have been tested, inspected, and are in accordance with this specification.

MEASUREMENT and PAYMENT: No measurement or direct payment of Cast Iron Castings will be made for furnishing and placing of Cast Iron Castings. All materials and labor required will be considered subsidiary to Item 403 "Storm Sewer Junction Boxes and Inlets" and shall be included in the unit price bid for said item.